

REMARKS

In the Office Action mailed December 29, 2004, claims 1, 2, 3, 5, 10, 12, 13, 20, and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubbard, et al. (U.S. Patent No. 4,969,457) in view of Jackson (U.S. Patent No. 3,490,447).

Claims 4, 5, and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hubbard, et al. in view of Springett, et al. (U.S. Patent No. 6,102,039).

Applicant respectfully traverses the 35 U.S.C. § 103(a) rejection to claim 1 over Hubbard, et al. in view of Jackson. Respectfully, incorporation of the internal layer 4 with protuberances 5 in Jackson into the face mask 10 of Hubbard, et al. would not result in a face mask as set forth in claim 1 of Applicant's application. Specifically, the resulting face mask would not include a body portion configured to be placed over a mouth and at least part of a nose of a user such that the air of respiration is drawn through the body portion.

Referring first to Jackson, this reference discloses a surgical mask that includes protuberances 5 that extend from an internal layer 4 of the surgical mask and rest against the wearer's skin (see Jackson at col. 2, I. 68 – col. 3, I. 3). The protuberances 5 provide an increased interior surface area next to the face so as to promote condensation thereon (see Jackson at col. 1, II. 71-72): The extra area added by the protuberances 5 act to increase the degree of condensation so as to provide for a surgical mask substantially cooler than previous masks (see Jackson at col. 2, II. 1-4).

The mask in Jackson is made of two laminated sheets of plastic (see Jackson at col. 2, II. 15-16). Alternatively, the mask may be made of two sheets of metal foil, such as aluminum foil, that are laminated to one another (see Jackson at col. 2, II. 22-24). Jackson explicitly calls for the face mask to be made of a material with good thermal conductivity, such as metal foil or a plastic sheet, so as to carry the heat of the face and breath away rapidly (see Jackson at col. 1, II. 67-70). The material making up the protrusions 5 in Jackson is a material that is impervious to fluids so that the face mask is likewise impervious to fluids (see Jackson at col. 1, II. 52-55). During use, the breath exhaled from the wearer will travel around the tortuous passageways defined by the protuberances 5 and exit the face mask to the exterior atmosphere about the peripheral

edge of the face mask (see Jackson at col. 4, II. 53-57). It is therefore the case that the layer making up the protuberances 5, along with the other layers of the face mask in Jackson, is made of a material that cannot be breathed through. The breath of the user will be both inhaled and exhaled through the **sides** of the face mask and not through the body portion of the face mask.

Hubbard, et al. discloses a face mask in which the body portion of the face mask is pervious to gases yet substantially impervious to the passage of body fluids from the environment through the mask (see Hubbard, et al. at col. 1, II. 59-63). The body portion of the face mask in Hubbard, et al. allows the user to breathe through the body portion yet prevents body fluids from passing so as to contact the face of the wearer (see Hubbard, et al. at col. 1, II. 63-66). In fact, the entire point of the face mask in Hubbard, et al. is to provide for a mask that allows a user to breathe through the material of the face mask (see Hubbard, et al. at col. 2, II. 10-15).

Therefore, even if one having ordinary skill in the art were somehow motivated to incorporate the protuberances 5 of Jackson into the face mask of Hubbard, et al., the resulting face mask would include a layer that includes protuberances that are made from a material that does not allow air to be passed therethrough. As such, the resulting face mask would work, if at all, so that the air of respiration would not be passed through the body portion of the face made but would instead be forced to go through the tortuous passageways defined by the protuberances and in and out of the face mask through the periphery of the face mask. This resulting face mask would not be the face mask as set forth in claim 1 of Applicant's application that calls for a body portion in which the air of respiration is drawn through the body portion. As such, even if combined the resulting face mask of Jackson and Hubbard, et al. would not meet all of the claim elements of claim 1 of Applicant's application.

Further, Applicant respectfully submits that it would not have been obvious for one having ordinary skill in the art to combine Jackson and Hubbard, et al. in the first place. The principle of operation in Jackson is to provide for a mask that filters contaminants through principles of condensation and impingement, rather than through filtration (see Jackson at col. 1, II. 50-53). In this regard, air is pushed through the tortuous passageways defined by the protrusions 5 so as to increase the degree of

condensation and improve the probability of impingement (see Jackson at col. 1, l. 72 – col. 2, l. 4). On the other hand, the principle of operation in Hubbard, et al. is to have the air of respiration drawn through the body portion of the face mask (see Hubbard, et al. at col. 1, ll. 63-66). Hubbard, et al. seeks to prevent fluid strikethrough through the face mask by providing two layers of material so as to reduce the velocity of the liquid striking the face mask (see Hubbard, et al. at col. 3, ll. 60-68). Therefore, the principle of operation of Hubbard, et al. is to provide for a body portion that is breathable with layers thereon so as to reduce the velocity of fluids striking the exterior of the face mask.

If the proposed combination of references would change the principle of operation of the references being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In the present case, incorporation of the layer having the protuberances of Jackson into the face mask of Hubbard, et al. would change the principle of operation of the face mask in Hubbard, et al. because air would no longer be able to be drawn through the body portion of the face mask. Likewise, the principle of operation of the face mask in Jackson would be changed because the resulting face mask would not be one made entirely of a metal foil or plastic sheet that is impervious to fluid strikethrough and that would promote a high level of thermal conductivity so as to draw the heat of the user's face and breath away from the user. As the principle of operation of one of the references, in this case both of the references, would be changed if combined, the teachings of the references are not sufficient to render the claims *prima facie* obvious.

If a proposed combination would render the reference being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed combination. In the present case, incorporation of the layer having the protuberances from Jackson into the face mask of Hubbard, et al. would result in a face mask with a body portion that does not permit the air of respiration to be passed therethrough. As such, Hubbard, et al. would be rendered unsatisfactory for its intended purpose. Likewise, such a resulting face mask would render Jackson unsatisfactory for its intended purpose because one of the purposes of the face mask in Jackson is to provide for a face mask made of a metal foil or plastic sheet so as to

maximize thermal conductivity. This purpose could not be obtained if the face mask instead had one or more layers constructed of the materials used in Hubbard, et al., such as cellulose fiber (see Hubbard, et al. at col. 3, ll. 49-50). Therefore, the face mask obtained upon incorporating Jackson into Hubbard, et al. would render Jackson unsatisfactory for its intended purpose and as such there can be no motivation for one having ordinary skill in the art to combine Jackson into Hubbard, et al..

Applicant respectfully submits that it would not have been obvious for one having ordinary skill in the art to combine Hubbard, et al. and Jackson because these two references disclose face masks made of materials that are specifically selected so as to provide for desired properties. As discussed, Hubbard, et al. and Jackson teach in completely opposite directions concerning the properties of the materials making up the face masks and the resulting way in which air is drawn either through the body portion of the face mask or under the peripheral edges of the face mask. Applicant respectfully submits that it would not have been obvious for one having ordinary skill in the art to combine two references that teach face masks having body portions made of completely different materials so as to obtain completely different results. Further, even if one having ordinary skill in the art were somehow motivated to make the proposed combination of Hubbard, et al. and Jackson, the resulting face mask still would not be the face mask as set forth in claim 1 of Applicant's application because the resulting face mask would include a layer having protuberances that would prevent the air of respiration from being drawn therethrough. As stated, claim 1 specifically calls for the air of respiration of the face mask to be drawn through the body portion.

Further, it would not have been obvious for one having ordinary skill in the art to provide the layer having the protuberances 5 of Jackson into Hubbard, et al. and then modify the layer and the protuberances 5 so that they were breathable therethrough. First, the entire point of the protuberances is to redirect the air of respiration through the tortuous passageways defined by the protuberances and not through the layers. Modification of the layer having the protuberances 5 so as to be breathable would thus frustrate the intended purpose of the protuberances and as such it would not have been an obvious modification. Further, Hubbard, et al. specifically teaches the use of additional cover layers so as to prevent fluid strikethrough (see Hubbard, et al. at col. 3,

II. 60-68). As such, there would have been no appreciable benefit of adding a layer having protuberances 5, for example to prevent fluid strikethrough, because Hubbard, et al. already teaches a preferred way of reducing the velocity of fluid striking the face mask. As such, there is no motivation for one having ordinary skill in the art to incorporate the layer having the protuberances 5 of Jackson into the face mask of Hubbard and then modifying this resulting face mask to make the layer with the protuberances 5 breathable.

As such, Applicant respectfully submits that claim 1 defines over the combination of Hubbard, et al. in view of Jackson and is in condition for allowance. Further, all claims that depend from claim 1 (claims 2-5 and 10) are also in condition for allowance. The rejections to claims 2-5 and 10 are made moot due to the allowance of claim 1.

Claim 12 also calls for a body portion where the air of respiration is drawn through the body portion. This structure is similar to that called for in claim 1, and Applicant respectfully submits that claim 12 defines over the combination of Hubbard, et al. in view of Jackson for essentially the same reasons as discussed above with respect to claim 1 and is in condition for allowance. Also, claims 13, 15, 16, 20, and 25 are also in condition for allowance as their rejections are made moot due to the allowance of claim 12 from which these claims depend.

Applicant respectfully submits that all claims are allowable and that the application is in condition for allowance. Favorable action thereon is respectfully requested. The Examiner is encouraged to contact the undersigned at the Examiner's convenience to resolve any remaining issues.

Please charge any additional fees required by this Response to Deposit Account No. 04-1403.

Respectfully submitted,

DORITY & MANNING, P.A.

Neal P. Pierotti

Neal P. Pierotti
Reg. No. 45,716
P.O. Box 1449
Greenville, SC 29602
(864) 271-1592
(864) 233-7342

February 21, 2005
Date